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I, JULIE BILLINGSLEY, TEAM LEADER EXAMINATION SUPPORT AND SALES hereby certify that annexed is a true copy of the Provisional specification in connection with Application No. 2003906956 for a patent by EQUITRONIC TECHNOLOGIES PTY LTD as filed on 17 December 2003.

WITNESS my hand this
Eighth day of April 2004

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Provisional Patent Application

EQUITRONIC TECHNOLOGIES PTY LTD

ABN 40 073 020 112

EQUINE FITNESS MONITORING SYSTEM

SADDLE BLANKET

The invention is described in the following statement

DATED December 13, 2003.

An Equine Fitness Monitoring Saddle Blanket

The Invention is described in the following statement.

This invention relates to an improvement in equine fitness, health and performance management whilst training the animal. Equine fitness is currently monitored passively by trainers and jockeys via trackwork results. Athlete science has provided certain parameters that have been proven over time and these parameters can be measured via heart rate monitors etc for maximum effectiveness. Traditionally there is no real time fitness monitoring for the equine animal i.e. Race and endurance horses. (Due mainly to the lack of efficient electronic equipment.

The Equine Fitness Monitoring Saddle Blanket allows heart rate and load (speed) to be monitored generating an instantaneous fitness profile in real time, or stored for later analysis.
The combination of heart rate, accurate speed and real time display (either on board or transmitted via data link to computer systems with associated software is being described.

The present invention allows for the practical application of the electronics described. Building the modules within the saddle blanket is considered by the inventor as the most practical way of building the system so as to be effective within the equine athletic industry.

A miniature combined electronics module is sewn into the saddle blanket with all relevant connections made available to the edge of the saddle blanket. A cavity is also available for a rechargeable power module. The combined electronics module consists of a heart rate monitor, a differential GPS receiver, an electronic data processing unit as well as other sensors and a miniature radio transceiver. Specially designed antennae are used to transmit and receive data from the equine athlete and trainer PC and are designed to work effectively under all track speeds and conditions. A small GPS antenna and cable assembly is mounted in the track rider's hat cover for safety and unobstructed view of the GPS satellites. Another option is to have the GPS processor with a small transceiver and power unit to enable wireless transmission of GPS data, both to the saddle blanket and riders display. A small antenna as part of the helmet wireless system would also allow differential input, either via the saddle blanket unit or and external radio source, the wireless system would be positioned on the helmet in the same position as the other antenna option.

As well as transmitting the data real time it will also be an option to have a data recorder for post processing. Also a real time display for the rider will be available either via cable connection or radio transmission, this unit could also be placed behind the horse's ears for better viewing.

Specifically the system relates to the way we integrate all electronic modules into a practical application (The saddle blanket and modules).

<u>To assist with understanding the invention reference will now be made to the accompanying drawings.</u>

In the drawings:

Diagram One shows the top view and positioning of modules within saddle blanket in relation to saddle.

Figure 2 shows a side view with associated major cabling and module.

Figure 3 shows the GPS antenna, cabling and riders display positioning.

Referring to Diagram one it can be seen that the electronic modules are located in close proximity to the saddle; this is to reduce movement by being held firmly in position by the above saddle. Having the modules in a corner position would cause too much movement.

Diagram one also shows a connecting data cable, this is to transfer the data from the "smart side" as in figure 2 to the side with data radio and power supplies (12) also connected to the data radio is a

transmitting antenna. However with miniaturization all components may be developed on one side only.

Figure 2 shows a side view of the electronic module(1) with five cables attached (2,4,9,11and13). (11) is the connecting data cable between modules as in diagram one.

An important aspect of the saddle blanket is how we incorporate the electrode cables 2 and 9 into the saddle blanket; this is for ease of use within the system. There are two electrodes required, one placed on the top shoulder of the horse (10) and one placed above the heart (8) just below the girth. Ease of use requires that these electrodes be separate units, then connected into saddle blanket connectors 7&9a whilst saddling the horse. Incorporating cables 2&9 into the saddle blanket also reduces the amount of free to air cabling, thereby improving safety. The connectors 5,6,7 and 9a allow for ease of use whilst saddling the horse.

The electronic module 1 incorporates the heart rate monitor, differential GPS unit, special data processing chips (for input to data radio or onboard recording) and necessary power management circuitry. Also the ability to add further data input at a later date is incorporated.

GPS antenna cable 13 is also a safety feature, allowing a 200mm flexible cable with connector means that if a rider falls of the horse the cable will pull out in a straight direction, thereby reducing the chance of jerk to rider. Further example is shown in figure 3.

Cable 17 leads to the riders wrist display unit, incorporating the same safety features as the GPS antenna cable. It is also envisaged that data could be sent to the wrist display via radio link.

A flat planar antenna 3 is used for the reception of differential input with cable 4, however the system could also operate without differential input. Also another type of receiving aerial could be used.

Also data could be transmitted via GSM mobile network linking into associated networks such as Internet and server applications or variations of such.

Figure 3 shows how the GPS antenna and cabling are placed on the rider and integrated into module one. The antenna 15 is placed into a cloth cover, which then covers the rider's helmet. Cabling 14 then travels down behind the rider under their apparel, then comes out and travels down the riders left leg terminating into a connector for ease of use (Whilst dismounting and mounting). Also this is a safety aspect as previously described. Male and female connectors are used 16.

The wrist display and cabling are described as 17. As stated a radio link may be used.

An Applicant

December 13, 2003

Andrew Stuart

ABSTRACT

An Equine Fitness Monitoring Saddle Blanket is disclosed.

The device is a combined heart rate monitor, DGPS module, and processors inbuilt into module (1) then connected via data cable (11) to a radio transceiver and power supply (12). The data is then either transmitted to a remote computer with associated software or recorded onboard (1&12).
The modules are sewn into a saddle blanket (Diagram one) with associated cabling (2,4,9,11,6,13 and 17).

GPS signals for speed calculations are received through helmet antenna, figure 3 (15). Then via cables (13 & 14 and connector (16) into module (1) where DGPS electronics are housed. GPS processor could also be on the riders helmet with transmitter and power supply to enable a wireless option link to main processing unit and riders display.

Heart rate input is via electrodes, figure 2 (8&10), connectors (7&9a) and cables 2&9 into module (1) where heart rate monitor electronics are housed.

Output to onboard wrist display (17) is via cable (17), Or wireless link.

Power supply is contained in module (12).

This device is for the professional collection of equine heart rate and speed data for use with fitness analysis software. The design within the saddle blanket allows for efficient safe use in the training environment.

Signed

A Stuart

13.12.03

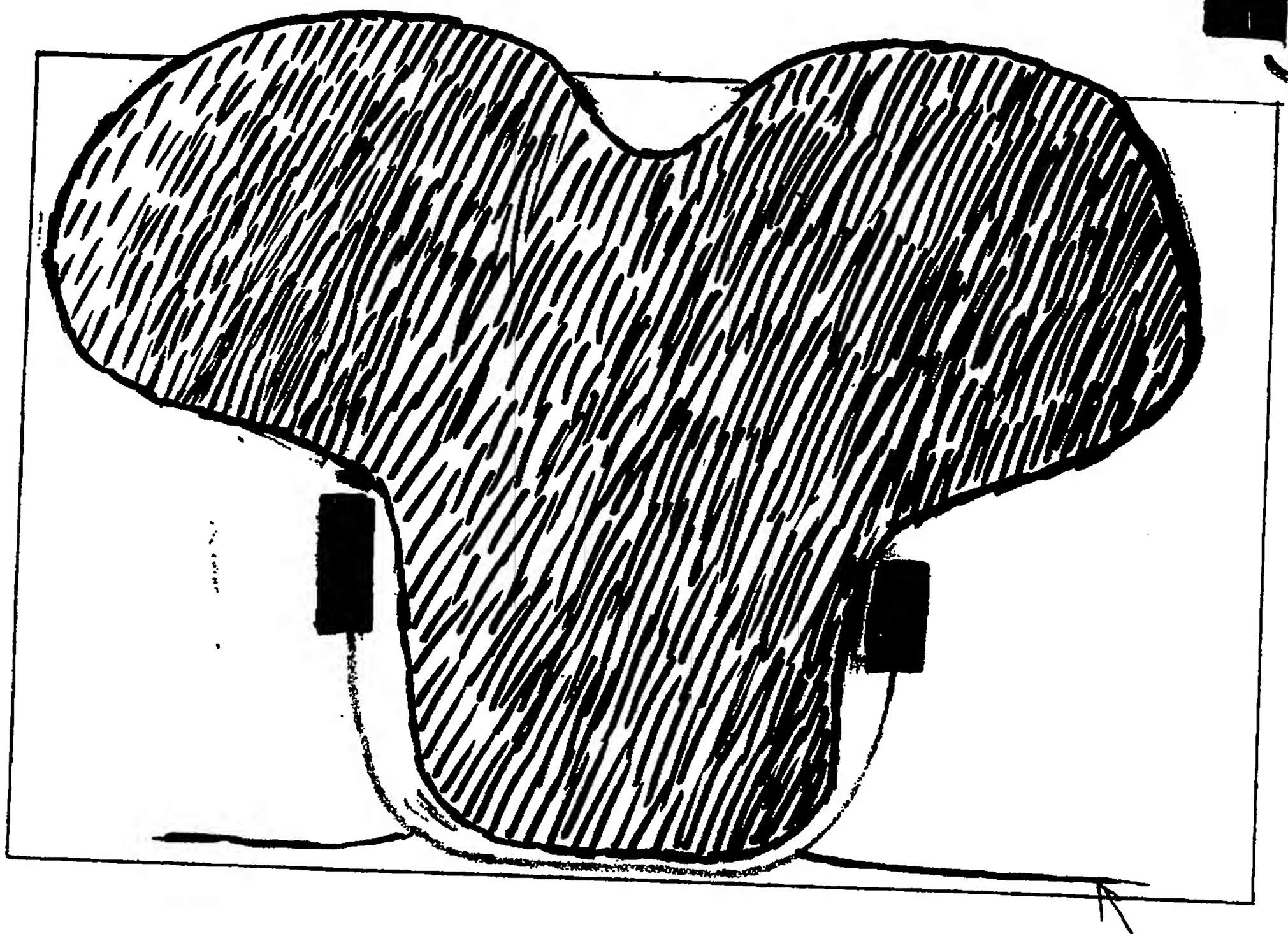
DIAGRAM ONE - TOP VIEW

SHADED AREA = ACTUAL SADDLE POSITION

=SADDLE BLANKET

=UNIT POSITIONING.

=CONNECTING DATA CABLE



TRANSMITTING ANTENNA

NOTE ↓ UNITS ARE WITHIN THE SADDLE BLANKET.

FIGURE 2 SIDE VIEW

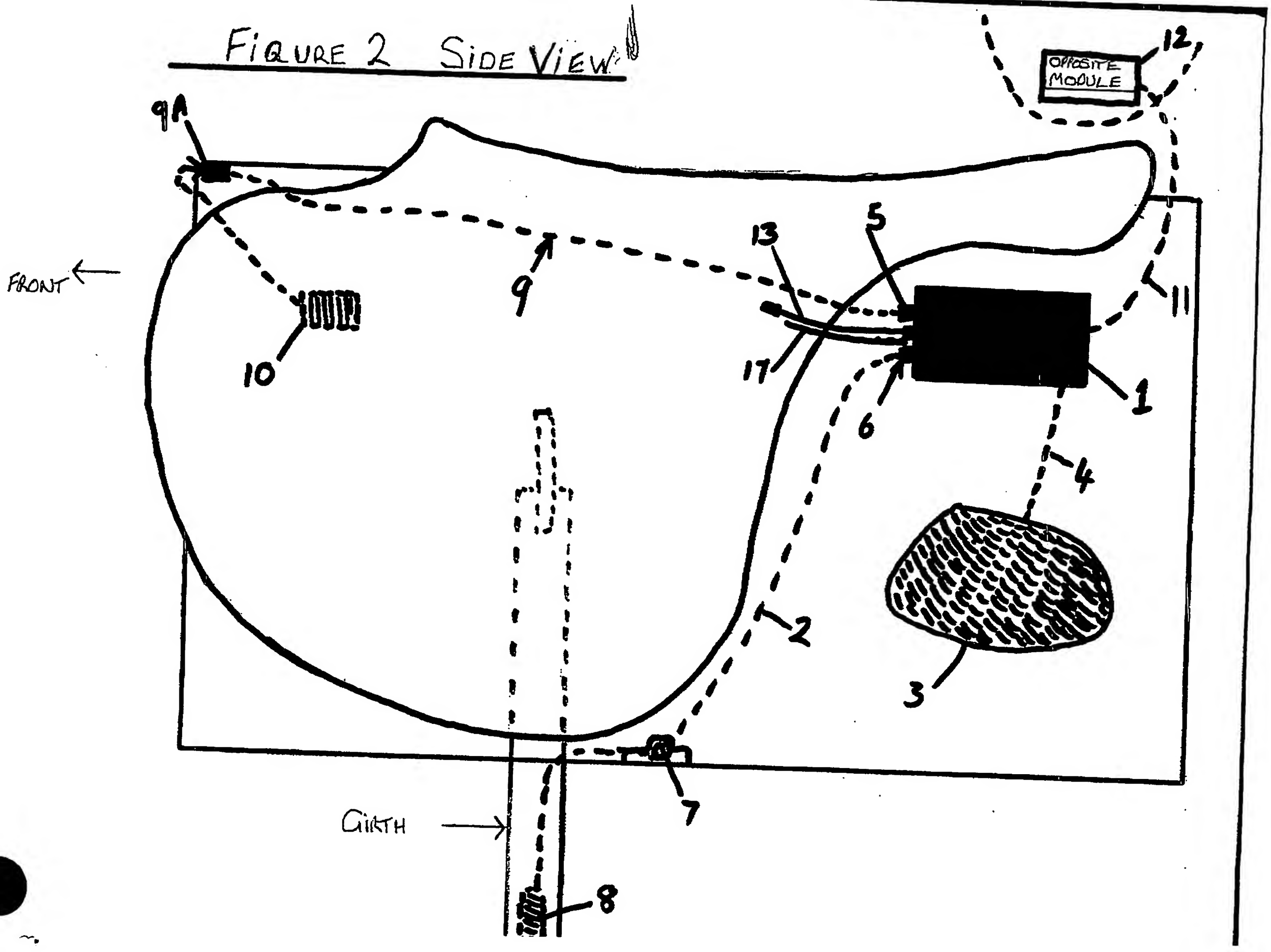


FIGURE 3 GPS ANTENNA AND CABLING